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### MANAGEMENT OF RISKS ASSOCIATED WITH INTRODUCTION OF ALIEN SPECIES AS PETS, AQUARIUM AND TERRARIUM SPECIES, AND AS LIVE BAIT AND LIVE FOOD, AND RELATED ISSUES

*Note by the Executive Secretary*

#### I. INTRODUCTION

1. Pursuant to paragraph 2 of decision X/38, the Executive Secretary convened a meeting of the Ad Hoc Technical Expert Group (AHTEG) on Invasive Alien Species from 16 to 18 February 2011 in Geneva, Switzerland, with generous financial assistance from the Governments of Spain and Japan. The AHTEG was mandated to suggest ways and means, including, *inter alia*, providing scientific and technical information, advice and guidance, on the possible development of standards by appropriate bodies that can be used at an international level to avoid spread of invasive alien species that current international standards do not cover, to address the identified gaps and to prevent the impacts and minimize the risks associated with the introduction of invasive alien species as pets, aquarium and terrarium species, and as live bait and live food. The report of the AHTEG meeting (UNEP/CBD/SBSTTA/15/INF/1) was presented to the fifteenth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice.

2. At its eleventh meeting, the Conference of the Parties took note of the report of the AHTEG and in paragraph 5 of decision XI/28 requested the Executive Secretary to prepare proposals for more detailed guidance for Parties on devising and implementing national measures on the introduction of alien species as pets, aquarium and terrarium species, and as live bait and live food, in order to complete the tasks set out in the annex to decision X/38, and to submit it for consideration by the Subsidiary Body before the twelfth meeting of the Conference of the Parties.

3. This note has been prepared in response to the request mentioned in paragraph 2 above. Section II provides an overview of the international regulatory framework and its standards and guidance relevant for addressing the risks of introduction of alien species through international trade, and also presents examples of regulatory and other measures undertaken by Parties, organizations and industry to minimize

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\* UNEP/CBD/SBSTTA/18/1.

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the risks caused by the introduction of alien species as pets, aquarium and terrarium species, and as live bait and live food. Building on the information contained in section II, section III of this note contains draft guidance on devising and implementing national measures to address the risks associated with introduction of alien species as pets, aquarium and terrarium species, and as live bait and live food. Section IV contains a draft recommendation that the Subsidiary Body may wish to suggest for consideration by the Conference of the Parties at its twelfth meeting.

## **II. OVERVIEW OF INTERNATIONAL GUIDANCE AND EXAMPLES FOR ITS IMPLEMENTATION BY PARTIES**

4. Aichi Biodiversity Target 9 of the Strategic Plan for Biodiversity 2011-2020 is that “by 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment”.
5. Pets, aquarium and terrarium species, live bait and live food are a subcategory of the “escape” pathway, that is, the movement of potentially invasive alien species from captivity or confinement into the natural environment. Through this pathway the organisms were initially intentionally imported or transported into confined conditions, but then escaped from such confinement. This may include accidental or irresponsible release of live organisms from confinement (see also document UNEP/CBD/SBSTTA/18/9).
6. The Conference of the Parties recognized the potential risks of introduction and spread of invasive animal species resulting from escapes of animals, or the release or escape of animals used as live food (paragraph 7 of decision XI/28).
7. The Conference of the Parties, at its eighth meeting, encouraged relevant Government departments, consumer protection groups, industry, trade and shipment organizations, and other relevant organizations such as the Universal Postal Union and the Global Express Association, to raise awareness with consumers, including through Internet sites that facilitate transactions or may otherwise be visited by consumers, and to further study, as appropriate, current safe disposal measures for imported alien species, with a view to considering the development of guidance or codes of practice regarding trade in pets, aquarium species and plant seeds, in particular disposal and discard of such species, and urged Parties and other Governments to take measures, as appropriate and consistent with their national and international obligations (paragraphs 52-53 of decision VIII/27).
8. In the same decision the Conference of the Parties further urged Parties and other Governments to take action, as appropriate and consistent with their national and international obligations, to prevent and minimize introductions of known invasive species into the wild, including through measures addressing disposal and discard of such species (paragraph 54 of decision VIII/27).
9. The Guiding Principles for the Prevention, Introduction and Mitigation of Impacts of Alien Species that Threaten Ecosystems, Habitats and Species (the Guiding Principles) adopted in decision VI/23\* of the Conference of the Parties provide guidance for developing effective strategies to minimize the spread and impact of invasive alien species. As stated in paragraph 1 of decision IX/4 B, the Guiding Principles continue to provide relevant guidance for work on invasive alien species to achieve the objectives of the Convention. Subsection A below considers how the Guiding Principles may be applied to help address the risks associated with introduction of alien species as pets, aquarium and terrarium species, and as live bait and live food.
10. While the Guiding Principles refer to “risk analysis” as (1) the assessment of the consequences of

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\* One representative entered a formal objection during the process leading to the adoption of this decision and underlined that he did not believe that the Conference of the Parties could legitimately adopt a motion or a text with a formal objection in place. A few representatives expressed reservations regarding the procedure leading to the adoption of this decision (see UNEP/CBD/COP/6/20, paras. 294-324).

the introduction and of the likelihood of establishment of an alien species using science-based information (i.e., risk assessment); and (2) the identification of measures that can be implemented to reduce or manage these risks (i.e., risk management), taking into account socio-economic and cultural considerations, no methodology for risk assessment for invasive alien species has been specified under the Convention.

11. The Conference of the Parties, at its seventh meeting, addressed the general lack of a risk analysis methodology under the Convention. It noted that there is potential for the application of existing methodologies for risk assessment and risk analysis, including those established in the contexts of plant and animal health, to a wider range of issues related to invasive alien species. More specifically, at its ninth meeting, the Conference of the Parties encouraged Parties, where appropriate, to make use of the risk assessment guidance and other procedures and standards developed by the International Plant Protection Convention (IPPC), the World Organisation for Animal Health (OIE) and other relevant organizations, in order to contribute to closing the identified gaps on invasive alien species at the national level, and in particular, to consider applying, where appropriate, the procedures and standards for quarantine pests under the IPPC to all invasive alien species that have adverse impacts on plant biodiversity, consistent with international obligations (paragraph 1 of decision IX/4 A).

12. At its eleventh meeting, the Conference of the Parties encouraged Parties and other Governments (i) to ensure, at national level, effective collaboration among national authorities and focal points that deal with the Convention on Biological Diversity, the International Plant Protection Convention, the World Organisation for Animal Health and others, (ii) to address threats from invasive alien species, and, (iii) as appropriate, to make full use of existing standards in addressing the risks associated with the introduction of alien species as pets, aquarium and terrarium species, and as live bait and live food (paragraph 4 of decision XI/28). Subsection B below (and the annex to the present document) considers how the SPS Agreement and related standards may be used to help address the risks associated with introduction of alien species as pets, aquarium and terrarium species, and as live bait and live food.

**A. *The Guiding Principles for the Prevention, Introduction and Mitigation of Impacts of Alien Species that Threaten Ecosystems, Habitats and Species; and relevant decisions of the Conference of the Parties***

13. The purpose of the Guiding Principles for the Prevention, Introduction and Mitigation of Impacts of Alien Species that Threaten Ecosystems, Habitats and Species (the Guiding Principles) adopted in decision VI/23\* of the Conference of the Parties is to assist governments to combat invasive alien species as an integral component of conservation and economic development (introduction of the Guiding Principles). This subsection considers how the Guiding Principles may be applied in order to address the risks associated with introduction of alien species as pets, aquarium and terrarium species, and as live bait and live food.

14. Guiding Principle 1 (precautionary approach) states that decisions concerning intentional introductions, which may include the introduction of alien species as pets, aquarium and terrarium species, and as live bait and live food, should be based on the precautionary approach, in particular with reference to risk analysis. Guiding Principle 2 (three-stage hierarchical approach) states that prevention is generally far more cost-effective and environmentally desirable than measures taken following the introduction and establishment of an invasive alien species; and that priority should be given to preventing the introduction of invasive alien species both between and within States. Thus in the case that invasive species have escaped or have been released and become established, measures for early detection and rapid response, including eradication, should be undertaken; and where eradication is not feasible, containment and long-term control measures should be applied.

15. Guiding Principle 4 (role of States) indicates that States should take appropriate individual and cooperative actions to minimize the risk that activities within their jurisdiction or control may pose to other States as a potential source of invasive alien species. Appropriate actions include the provision of any available information on invasive behaviour or invasive potential of a species. With regard to the introduction of alien species as pets, aquarium and terrarium species, and as live bait and live food, the

provision of information on the invasive character of species is particularly relevant as this information may form the basis for the conduct of a risk assessment and the adoption of appropriate eradication or management measures.

16. According to Guiding Principle 7 (border control and quarantine measures), States should implement border controls and quarantine measures for alien species that are or could become invasive. States should consider putting in place authorization requirements and other measures at the border based on the result of a risk analysis of the threats posed by alien species and their potential pathways of entry. With regard to the introduction of alien species as pets, aquarium and terrarium species, and as live bait and live food, authorization requirements and other border control measures may be one means to address the increasing frequency of non-native species arriving at national borders.

17. Guiding Principle 11, unintentional introductions, is also relevant. It states that all States should have in place provisions to address unintentional introductions (or intentional introductions that have become established and invasive). These could include statutory and regulatory measures and establishment or strengthening of institutions and agencies with appropriate responsibilities. Operational resources should be sufficient to allow for rapid and effective action. In addition, common pathways leading to unintentional introductions need to be identified and appropriate provisions to minimize such introductions should be in place.

18. In its paragraph 2, Guiding Principle 11 lists, *inter alia*, specifically sectoral activities, such as fisheries, agriculture, aquaculture including ornamental aquaculture, and the pet industry, as frequent pathways for unintentional introductions, and states that environmental impact assessment should address the risk of unintentional introduction of invasive alien species through these pathways. Also, wherever appropriate, a risk analysis of the unintentional introduction of invasive alien species should be conducted for these pathways.

19. Guiding Principle 14 states that when eradication is not appropriate, limiting the spread (containment) of invasive alien species is often an appropriate strategy in cases where the range of the organisms or of a population is small enough to make such efforts feasible. Regular monitoring is essential and needs to be linked with quick action to eradicate any new outbreaks.

**B. *The World Trade Organization Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement)***

20. The risk of the introduction of alien species, including as pets, aquarium and terrarium species, and as live bait and live food, through international trade can be managed for the most part at national level by applying sanitary and phytosanitary measures for which standards under the Agreement on the Application of Sanitary and Phytosanitary Measures of the World Trade Organization (SPS Agreement) generally exist (see annex below for more information), although some gaps and inconsistencies may remain. For example, the Conference of the Parties, in decision VIII/27, identified some gaps in the international regulatory framework. Under the SPS Agreement it should be possible to achieve the appropriate level of protection through import measures, as long as the import measures are necessary for the protection of human, animal or plant life or health, based on scientific principles, not discriminatory in their effect on other World Trade Organization (WTO) members' exports, and are not more trade-restrictive than is necessary to achieve the desired level of sanitary or phytosanitary protection.

21. Measures that conform to international standards, guidelines or recommendations (for food safety, those developed by the Codex Alimentarius Commission; for animal health and zoonoses, those developed by the World Organisation for Animal Health (OIE), for plant health those developed by the International Plant Protection Convention) are consistent with the WTO SPS Agreement and WTO members do not have to provide an additional scientific justification. A standard for risk analysis is available for pests, including animals that are injurious to plants, and invasive alien plants that are

injurious to plants (International Standards for Phytosanitary Measures (ISPM) No. 11).<sup>1</sup> In addition, guidelines on assessing risks of introduction of organisms under kingdom Animalia (the OIE guidelines for assessing risks of non-native animals becoming invasive)<sup>2</sup> and animal diseases (the OIE Animal Health Codes and the OIE Manuals)<sup>3</sup> are available. The importing country may choose the appropriate method to conduct a risk analysis depending on what type of alien organism will be assessed on its risk of invasion and what type of biodiversity could be threatened by the introduction of an alien organism.

**C. Other measures relevant to addressing the risks associated with introduction of alien species as pets, aquarium and terrarium species, and as live bait and live food**

*(i) Labelling*

22. The Ad Hoc Technical Expert Group meeting on addressing the risks associated with the introduction of alien species as pets, aquarium and terrarium species, and as live bait and live food, held in Geneva, Switzerland, from 16 to 18 February 2011, suggested the appropriate labelling of shipments of live organisms regarding their potential impact on biodiversity (UNEP/CBD/SBSTTA/15/INF/1) in order to bring those potential impacts to the attention of relevant stakeholders.

23. Limited experience with labelling exists in the context of ensuring animal welfare. The International Air Transport Association (IATA) has set international standards for live animal transportation by commercial air. The Conference of the Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) recommended in Resolution Conf. 10.21 (Rev. CoP14), on transport of live specimens, that all Parties dealing with the preparation and transport of live animal specimens promote the full and effective use by Management Authorities of the IATA Live Animals Regulations (for animals) and the IATA Perishable Cargo Resolutions (for plants) and incorporate them into their domestic legislation. Similar labelling may apply for domestic barter, transfer or shipping of live animals with various carriers, including postal and other shipping services.

24. Similar practice was developed by the World Health Organization (WHO), IATA, the International Civil Aviation Organization (ICAO) and the International Maritime Organization (IMO) to biological substances that pose a threat to the health of living organisms, primarily that of humans (biohazards). The label “Biohazard” and its associated symbol are generally used as a warning in handling and shipping.

25. Currently, there is no official guidance and appropriate warning symbol for the handling and shipping of alien species that pose a potential hazard to biodiversity.

*(ii) Trade over the Internet (e-Commerce)*

26. In 2012, the International Plant Protection Convention prepared a document on “Internet Trade (e-Commerce) in Plants – Potential Phytosanitary Risks”,<sup>4</sup> to present the preliminary findings of a desk study that explored the range of products being offered for sale through the Internet and highlighted potential risks to plant health and the environment. The document considered, in particular, invertebrate, arthropod and other organisms, which, in the pet trade, are often referred to as aquarium livestock and can be used in aquatic ecosystems, aquaria and for insect rearing.

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<sup>1</sup> [https://www.ippc.int/sites/default/files/documents//1367503175\\_ISPM\\_11\\_2013\\_En\\_2013-05-02.pdf](https://www.ippc.int/sites/default/files/documents//1367503175_ISPM_11_2013_En_2013-05-02.pdf).

<sup>2</sup> [http://www.oie.int/fileadmin/Home/eng/Our\\_scientific\\_expertise/docs/pdf/OIEGuidelines\\_NonNativeAnimals\\_2012.pdf](http://www.oie.int/fileadmin/Home/eng/Our_scientific_expertise/docs/pdf/OIEGuidelines_NonNativeAnimals_2012.pdf).

<sup>3</sup> <http://www.oie.int/international-standard-setting>.

<sup>4</sup> [https://www.ippc.int/largefiles/2013/Internet\\_trade\\_of\\_plants.pdf](https://www.ippc.int/largefiles/2013/Internet_trade_of_plants.pdf).

**D. Examples of implementation by Parties, organizations or industry**

*(i) List of Specimens Taken to be Suitable for Live Import in Australia*<sup>5,6</sup>

27. The import of live animals into Australia is controlled by the Environment Protection and Biodiversity Conservation (EPBC) Act 1999, and the Quarantine Act 1908. These laws apply to anyone who intends to bring a live exotic animal into Australia. In order to be eligible for import into Australia, a species, subspecies or hybrid specimen must be listed on the “List of Specimens Taken to be Suitable for Live Import” (the live import list).<sup>7</sup> As a general rule, the Department’s policy is that any cross or hybrid specimen (irrespective of generational distance from the original mating or wild ancestor) is prohibited from import to Australia unless it is specifically listed on the live import list.

28. Anyone, whether a member of the public, a public or private institution or a commercial enterprise, can propose amendments to the live import list to include a new specimen. For an amendment to the list, a comprehensive environmental risk assessment must be undertaken that demonstrates that the specimen does not pose an unacceptable level of risk to the Australian environment.

*(ii) Invasive Alien Species Act in Japan (Law No. 78)*

29. In Japan, under the announcement of national policy by the Cabinet regarding implementation of relevant measures to prevent various damages caused by invasive alien species, the Invasive Alien Species Act was enacted in 2005. The lists of (i) designated invasive alien species (IAS); (ii) Uncategorized Alien Species (UAS); and (iii) living organisms required to have a certificate attached (LORCA) are produced in consultation with an expert panel.

30. The public was invited to provide comments on these lists, which were subsequently presented to other WTO Members. Under the Invasive Alien Species Act, breeding, planting, keeping, and carrying of invasive alien species is prohibited in Japan, unless permission from the competent authorities has been obtained. Specific cases can be exempted from this requirement. Import and transfer of invasive alien species is also prohibited unless the appropriate permission has been granted by the competent authorities.

31. Release of listed species is prohibited under any condition. For Uncategorized Alien Species with the potential to become invasive, a detailed assessment is required before a permission to import or export will be granted. Regarding LORCA, any species that cannot be clearly distinguished from designated invasive alien species or Uncategorized Alien Species must be labelled with documentation issued by the government or other competent authorities of the exporting country, including information on their taxa and characteristics. The competent authorities can request relevant information from individuals who have obtained the import permission as well as other persons concerned. The competent authorities also inspect the site where the species is being used, and order qualified persons to take appropriate measures, where necessary. The regulation also provisions for penalties and interim measures.

32. In 2013 the Invasive Alien Species Act was amended (i) to include interbred organisms of the listed invasive alien species and their descendants; (ii) to add an exception for release of invasive alien species, including releases of infertile organisms, for experimental purposes; and (iii) to provide an enforcement mechanism for the inspection of goods and commodities for import to prevent the introduction of invasive alien species and LORCA prior to customs clearance.

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<sup>5</sup> <http://www.environment.gov.au/topics/biodiversity/wildlife-trade/live-plants-and-animals/live-import-list>.

<sup>6</sup> <http://www.environment.gov.au/topics/biodiversity/wildlife-trade/live-plants-and-animals/live-import-list/hybrid-animals>.

<sup>7</sup> Domestic cats and dogs were originally included on the live import list through a transfer from the Wildlife Protection (Regulation of Exports and Imports) Act 1982 (Cth) under section 303EB(4) of the EPBC Act at the establishment of the live import list. As such neither underwent a risk assessment (as is now required under the EPBC Act) and had such an assessment been undertaken, would almost certainly have been deemed to represent an extreme risk to the Australian environment (the Department has acknowledged the extreme risk that the feral cat represents by listing it as a key threatening process and has developed a threat abatement plan to manage that risk).

33. Figure 1 shows the development of the import of live animals (reptiles and birds).<sup>8</sup> The import volume of live animals has decreased since the Invasive Alien Species Act was enacted in 2005.

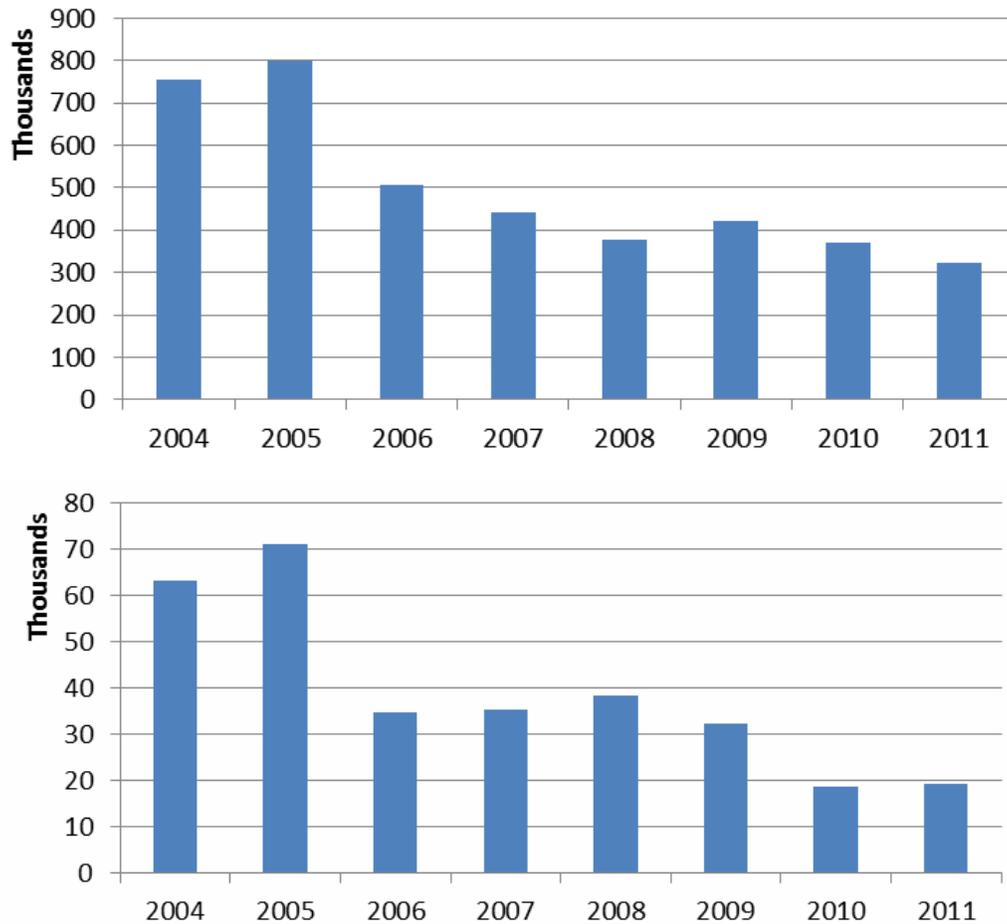


Figure 1. Annual import into Japan of live reptiles (upper graph) and live birds (lower graph) 2004-2011. The Invasive Alien Species Act was enacted in 2005.

(iii) *European Union: Council Regulation (EC) No 338/97 of 9 December 1996 on the protection of species of wild fauna and flora by regulating trade therein*

34. The European Commission has established import suspensions on live specimens of certain alien species listed in Annex B to EC Regulation No 338/97, known to present an ecological threat to fauna and flora indigenous to the European Community. Live specimens of these species are banned from import to the European Union, and the border service inspects for them (<http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013R0750&from=EN>).

35. Annex B to EC Regulation No 338/97 includes seven invasive alien species that are known to pose an ecological threat to indigenous species (Art. 3.2(d)) (see also Commission Regulation (EU) No 101/2012 of 6 February 2012 amending Council Regulation (EC) No 338/97 on the protection of species of wild fauna and flora by regulating trade therein):

- Red eared slider (*Trachemys scripta elegans*);
- American bullfrog (*Rana catesbeiana*);<sup>9</sup>

<sup>8</sup> The original figures are available at <http://www.env.go.jp/council/former2013/13wild/y133-04/mat05.pdf>.

<sup>9</sup> *Lithobates catesbeianus* is also in use as a synonym.

- Painted turtle (*Chrysemys picta*);
- American ruddy duck (*Oxyura jamaicensis*); and
- Three squirrel species (*Callosciurus erythraeus*, *Sciurus carolinensis*, *Sciurus niger*).

36. Under consideration in the European Union is a proposed regulation on the prevention and management of the introduction and spread of invasive alien species.

(iv) *Voluntary codes of conduct and awareness raising*

37. Codes of conduct focused on pets have been developed by several Parties to the Convention and by the pet industry. Codes of conduct are not legally binding, and they can encourage actions taken by the industry, consumers and all other relevant stakeholders. These may include best management practices that are shared by experts. The following are examples of codes of conduct/practice relevant to pet, aquarium and terrarium species, live bait and live food:

- (a) European code of conduct on pets and invasive alien species (see below);<sup>10</sup>
- (b) Voluntary codes of conduct for the pet trade (by Instituto Hórus in Brazil);<sup>11</sup>
- (c) National reptile improvement plan (by the Pet Industry Joint Advisory Council);<sup>12</sup>
- (d) Ornamental Aquatic Trade Association code of conduct.<sup>13</sup>

38. For example, the Code of Conduct on Pets and Invasive Alien Species (including ornamental fish) in Europe was developed by the Council of Europe<sup>14</sup> to assist in establishing a single common standard set of behaviours that will enable the continued biosafety-secure ownership of pets while limiting to a minimum any chances of them becoming invasive and causing either economic or ecological harm. It is addressed primarily at the pet industry (including importers, breeders, retailers), keepers and owners. The code includes recommendations on the promotion of public awareness on ecological problems caused by invasive alien species introduced as pets and appropriate methods to prevent escapes as well as the hazards of deliberately releasing pets. Other key issues are the accurate identification of species to be sold, and information to the users on the behavioural characteristics and care of the species, to help informed purchases; options to avoid pets becoming unwanted and responsible alternatives that are available for those wishing to relinquish ownership; appropriate techniques that reduce the invasive potential of the species kept; development of simple questionnaires to traders and keepers to avoid placing on the market “new” potentially invasive species.

39. Raising awareness at the community level on consequences of release or escapes and possible biological invasion is important. The introduced species should be recognized as threat to biodiversity in the community and beyond. Providing educational materials on responsible practices that are consistent with national policy is necessary. Some examples of education tools for such purpose are available on websites:

- (a) Sales of pets, pet ownership and animal exhibition (Singapore);<sup>15</sup>

<sup>10</sup> European code of conduct on pets and invasive alien species, available at <https://wcd.coe.int/com.instranet.InstraServlet?command=com.instranet.CmdBlobGet&InstranetImage=1959973&SecMode=1&DocId=1776136&Usage=2>.

<sup>11</sup> Voluntary codes of conduct for the pet trade, available at [www.institutohorus.org.br/pr\\_pets\\_eng.htm](http://www.institutohorus.org.br/pr_pets_eng.htm).

<sup>12</sup> National reptile improvement plan (PIJAC), available at [www.pijac.org/documents/nripadoptfinal.pdf](http://www.pijac.org/documents/nripadoptfinal.pdf).

<sup>13</sup> Ornamental Aquatic Trade Association code of conduct, available at [www.ornamentalfish.org/common/acrobat/codeofconduct.pdf](http://www.ornamentalfish.org/common/acrobat/codeofconduct.pdf).

<sup>14</sup> Convention on the Conservation of European Wildlife and Natural Habitats, 2011, Code of Conduct on Pets and Invasive Alien Species (including ornamental fish) in Europe, T-PVS/Inf(2011) 1 rev1.

<sup>15</sup> Sales of pets, pet ownership and animal exhibition (Singapore), available at [www.ava.gov.sg/AnimalsPetSector/SalesOfPetsOwnershipExhib/PetShops/#grading](http://www.ava.gov.sg/AnimalsPetSector/SalesOfPetsOwnershipExhib/PetShops/#grading).

- (b) Responsible pet owners programme (Australia);<sup>16</sup>
- (c) Responsible pet ownership (Singapore);<sup>17</sup>
- (d) Pet pathway tool kit (Pet Industry Joint Advisory Council).<sup>18</sup>

40. Some examples of voluntary measures by the private sector including veterinary/fisheries experts, pet industry and pet owners to self-regulate the handling of live species are available on websites:

(a) Habitattitude™ - An ANS (Aquatic and Nuisance Species) Task Force Partnership representing the Pet Industry Joint Advisory Council, the US Fish and Wildlife Service, and the NOAA National Sea Grant College Program<sup>19</sup> (this programme targets aquatic species);

(b) Importing non-native animals – what you need to know (Government for the general public in England and Wales);<sup>20</sup>

(c) Responsible pet ownership (produced by the Pet Food Industry Association of South Africa, South African Animal Health Association, South African Companion Animal Council, and South African Veterinary Association).<sup>21</sup>

41. Among the stakeholders of live animal markets and end-users of the live species are anonymous consumers / pet owners. There is no guarantee that the introduced alien species will be kept for its full lifespan. Both regulatory and non-regulatory measures have an important role to discourage irresponsible releases.

42. Nature conservation legislation may impose a strict ban on releasing non-native species into nature and especially protected areas in many countries. However, areas not designated as protected areas may also be ecologically vulnerable and need to be protected from the introduction of invasive alien species.

43. Attributing responsibility to the pet, aquarium and terrarium retailers and industry to provide accurate information on the characteristics of the pet can avoid uninformed purchase of animals that could become unwanted. Possible measures to prevent release of unwanted pets or other alien species to the environment include attributing responsibility to the pet owner to find a new home for the pet, and the provision of:

- (a) Resale or return arrangements by the pet retailer or breeder;
- (b) Formal rehoming programmes with appropriate information support;
- (c) Amnesty programmes run by local wildlife agencies or animal welfare organizations;
- (d) Veterinary euthanasia or appropriate humane disposal.

### *E. Conclusions from section II*

44. The WTO SPS Agreement as well as the international standards, guidelines or recommendations recognized by the agreement (for animal health and zoonoses, those developed by the OIE; for plant health those developed by the International Plant Protection Convention) provide a framework for addressing the risk of the introduction of alien species, including as pets, aquarium and terrarium species,

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<sup>16</sup> Responsible pet owners programme (Australia), available at [www.pets.info.vic.gov.au/](http://www.pets.info.vic.gov.au/).

<sup>17</sup> Responsible pet ownership (Singapore), available at [www.ava.gov.sg/AnimalsPetSector/ResponsiblePetOwnership/](http://www.ava.gov.sg/AnimalsPetSector/ResponsiblePetOwnership/).

<sup>18</sup> Pet pathway tool kit (Pet Industry Joint Advisory Council), available at [www.petpathwaytoolkit.com/Pet-Pathway-Toolkit-%20Final%202011.pdf](http://www.petpathwaytoolkit.com/Pet-Pathway-Toolkit-%20Final%202011.pdf).

<sup>19</sup> Habitattitude™ <http://www.habitattitude.net/>.

<sup>20</sup> Importing non-native animals – what you need to know (Government for the general public in England and Wales) <http://archive.defra.gov.uk/wildlife-pets/wildlife/management/non-native/documents/nn-import-leaflet.pdf>.

<sup>21</sup> [http://www.petwise.co.za/live/content.php?Category\\_ID=153](http://www.petwise.co.za/live/content.php?Category_ID=153).

and as live bait and live food, through international trade, and to achieve the appropriate level of protection through import measures.

45. For the successful application of the existing framework it is crucial to identify the taxon of live organism to be introduced, its natural distribution range, its ecological risks for biodiversity and invasion history in areas with similar climatic or ecological conditions and other countries or areas. This information is necessary to enable the assessment of the risk of a biological invasion and also important for the establishment of import measures by the relevant national authority and to provide guidance for inspection at the border. If alien live organisms, including pets, aquarium and terrarium species, and live bait and live food, become established, the Guiding Principles provide general guidance to eradicate, control or mitigate their impact. Guidance on methodologies for early detection and rapid response, surveillance and other measures to prevent the further spread of invasives are available in the standards for pests (ISPMs) or animal diseases (the OIE Animal Health Codes and OIE Manuals), and can be used by national bodies (e.g., environment sector).

46. However, no detailed guidance exists with regard to specific measures on the prevention of escapes and unintentional releases of live organisms while they are moved or kept beyond border areas. In order to successfully address the risk of the introduction of alien species as pets, aquarium and terrarium species, and as live bait and live food, escapes, releases from captivity and possible subsequent establishment and spread should be addressed by Parties, relevant regional organizations and the industry, sectors and organizations dealing with pets, aquarium and terrarium species, live bait and live food.

47. Considering that any species or lower taxon outside its natural distribution may carry the risk of biological invasion over time, it is important to recognize that moving live organisms is potentially hazardous to biodiversity. However, the international legal framework does not currently contain any guidance with regard to labelling that would provide the appropriate warning for those involved in the handling and shipping of alien species that are potentially a hazard to biodiversity.

48. Guidance on measures to prevent escapes and releases, including irresponsible releases, needs to target those that provide information and supply live organisms and the necessary containers for live organisms. This includes the industry and more specifically retailers inside and outside of an importing country. In addition, guidance also needs to target the users of pets, aquarium and terrarium species, live bait and live food, ensuring that users are given proper and appropriate information on the ecological risks that the organism may have as well as the knowledge to take measures to minimize risks.

49. Based on these observations, and to assist Parties in devising and implementing national measures, draft guidance to address the risks associated with introduction of alien species as pets, aquarium and terrarium species, and as live bait and live food, has been developed and is presented in the following section.

50. While, in accordance with paragraph 5 of decision XI/28 this guidance addresses national measures, the successful application of this guidance will benefit significantly from regional cooperation in assessing the risks to biodiversity that animals and plants introduced as pets, aquarium and terrarium species, live bait and live food may bring; in implementing measures to eradicate and control invasive alien species; and in engaging with the pet, aquarium and terrarium industry or sector in adopting suitable measures.

### **III. DRAFT GUIDANCE ON DEVISING AND IMPLEMENTING NATIONAL MEASURES TO ADDRESS THE RISKS ASSOCIATED WITH THE INTRODUCTION OF ALIEN SPECIES AS PETS, AQUARIUM AND TERRARIUM SPECIES, AND AS LIVE BAIT AND LIVE FOOD**

#### *Objectives and nature of this guidance*

51. This guidance is intended to assist countries and relevant organizations in devising and implementing national measures to address the risks of the introduction of alien species as pets, aquarium

and terrarium species, and as live bait and live food. It provides elements that countries may use for the development of national regulations or codes of conduct, or that international organizations, industry and civil society organizations may use in for voluntary codes of conduct and other guidance.

52. The introduction of invasive alien species as pets, aquarium and terrarium species, and as live bait and live food, is a subcategory of “escape” as a pathway. Escape is the movement of organisms from captivity or confinement into the natural environment. Through this pathway the organisms are initially intentionally imported or transported into the confined conditions, then escape from such confinement. This may include accidental or irresponsible release of live organisms from confinement, including cases such as the disposal of live food into the environment or the use of live baits in non-confined water systems.

53. For the purpose of this guidance, pets, aquarium and terrarium species, live bait and live food are understood to include lower taxa and hybrids (including hybrids between native organisms and organisms that are alien in the region to which they are intended to be imported or transported).

54. This guidance is intended to apply to import or transport to a distinct biogeographical area, of pets, aquarium and terrarium species, live bait and live food, including trade via the Internet. It is addressed to States, relevant organizations, the industry and consumers including, as appropriate, all actors along the value chain (such as importers, breeders, wholesalers, retailers and customers). For the case of live food, it also includes restaurants and live markets.

55. This guidance is voluntary and is not intended to affect any existing international obligations. It is intended to be used in conjunction with other relevant guidance, for example the Guiding Principles for the Prevention, Introduction and Mitigation of Impacts of Alien Species that Threaten Ecosystems, Habitats and Species; standards, guidelines and recommendations developed under the International Plant Protection Convention or under the World Organisation for Animal Health; and existing voluntary codes.

#### *Prevention and responsible conduct*

56. Industry and all actors should be aware of the risks of alien live organisms becoming invasive and their potential negative impacts on biodiversity, including ecosystems, habitats, and species. States, industry and relevant organizations should undertake public awareness campaigns to this effect.

57. Generally, and as a priority, States, relevant organizations and the industry should promote the use of native species, or species that have been shown to be non-invasive, as pets and aquarium and terrarium species.

58. States, relevant organizations and the industry should strongly encourage the use of only non-invasive species as live bait.

59. States, relevant organizations and the industry should raise awareness of buyers and sellers on the importance of safe handling and disposal of invasive species used as live food.

60. States, relevant organizations, the industry and consumers should handle any potentially invasive pet, aquarium and terrarium species, or species used as live bait and live food, responsibly and with utmost care. They should undertake, where possible and appropriate, the measures listed in paragraph 67 below voluntarily even in cases where they would not formally be required.

#### *Risk assessment and management*

61. When planning to import or transport to a distinct biogeographical area, where they are non-native, pets, aquarium and terrarium species, live bait and live food, States, relevant organizations and the industry, as appropriate, should undertake a risk assessment. The risk assessment may draw on previously conducted assessments and other available information as appropriate. The risk assessment should consider, *inter alia*:

(a) The probability of escape of the species from confinement (including through irresponsible release and unintentional release);

- (b) The probability of establishment and spread of the species; and
- (c) The significance of the impacts of establishment and spread of the species on biodiversity.

62. The assessment of the probability of escape should take into account the specific characteristics of the species as well as existing measures in place to retain it within confinement.

63. Where the risk assessment indicates that the risk associated with the pet, aquarium and terrarium species, live bait or live food is acceptable, the species may be imported or transported to a distinct biogeographical area. States, relevant organizations and the industry may need to repeat the risk assessment if new information becomes available that may change the outcome of the assessment.

64. Where the risk assessment indicates that the risk associated with the pet, aquarium and terrarium species, live bait or live food is not acceptable, measures to manage the risk should be taken. They could include the requirement to undertake one or more of the actions listed in paragraph 67 below.

65. All consignments of pet, aquarium and terrarium species, live bait or live food should clearly indicate the taxon (at the lowest known taxonomic rank and if possible the genotype, using the scientific name), natural distribution, and potential impact on biodiversity of the species.

66. Where the risk assessment indicates that the risk associated with the pet, aquarium and terrarium species, live bait or live food is not acceptable and risk management measures are not sufficient to lower the risk, the import or transport of the species should not take place.

#### *Measures*

67. A number of measures are available to address the risk associated with species introduced as pets, aquarium and terrarium species, live bait and live food. Examples include:

- (a) To demonstrate that appropriate measures to prevent escape (e.g., methods of secure confinement, handling, and transport) are in place;
- (b) To inform all persons involved in transporting, handling, selling, using or keeping the species of its risk and appropriate measures to prevent escape (e.g., methods of secure confinement, handling, and transport);
- (c) To request users, consumers and owners of the species not to release the species into the natural environment and, in the event of an escape, to take immediate measures to recapture the organism and report the escape to the relevant authorities in order to facilitate a rapid response;
- (d) To provide secure and humane services for the return, resale or rehoming of undesired species;
- (e) To demonstrate that appropriate response measures, including eradication and control, are in place to address potential introduction, establishment and spread;
- (f) To ensure that appropriate and safe methods of disposal are used by buyers and sellers for live food.

68. Consignments may be labelled as a potential hazard to biodiversity unless the species has been shown to be safe for import to the particular country or biogeographical region in question.

#### *Information sharing*

69. The results of risk assessments should be made publicly available.

70. States should maintain lists of species shown to be safe for import into particular countries or biogeographical regions, including detailed information on their native range and a clear definition of the biogeographical regions for which they are shown to be safe.

71. States should maintain lists of species with the assessed potential to become invasive and

associated with unacceptable risks for biodiversity.

*Consistency with other international obligations*

72. Measures under this guidance should be undertaken consistent with applicable international obligations (for example the Agreement on the Application of Sanitary and Phytosanitary Measures of the World Trade Organization).

#### IV. SUGGESTED RECOMMENDATION

73. The Subsidiary Body may wish to recommend that the Conference of the Parties, at its twelfth meeting, include the following elements in its decisions on further guidance to support the implementation of Aichi Biodiversity Target 9:

*The Conference of the Parties,*

*Recognizing* the negative impacts of invasive alien species introduced as pets, aquarium and terrarium species, and as live bait and live food, on biodiversity, and the high risk of escape and release, including irresponsible release and unintentional release of these live organisms from their captivity,

*Reaffirming* that the Guiding Principles for the Prevention, Introduction and Mitigation of Impacts of Alien Species that Threaten Ecosystems, Habitats or Species annexed to decision VI/23\* continue to provide guidance to Parties, other Governments, relevant organizations and all biodiversity stakeholders,

*Recalling* its encouragement to Parties, in decision IX/4, to make use of the risk assessment guidance and other procedures and standards developed by the International Plant Protection Convention, the World Organisation for Animal Health (OIE) and other relevant organizations,

1. *Adopts* the Guidance on devising and implementing national measures to address the risks associated with the introduction of alien species as pets, aquarium and terrarium species, and as live bait and live food, as contained in the annex to this decision;<sup>22</sup>

2. *Urges* Parties to disseminate this guidance widely and to promote its use, as appropriate, for the development of national regulations or codes of conduct, and for the development of voluntary codes of conduct and other guidance by industry and relevant organizations.

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\* One representative entered a formal objection during the process leading to the adoption of this decision and underlined that he did not believe that the Conference of the Parties could legitimately adopt a motion or a text with a formal objection in place. A few representatives expressed reservations regarding the procedure leading to the adoption of this decision (see UNEP/CBD/COP/6/20, paras. 294-324).

<sup>22</sup> On the basis of part III of UNEP/CBD/SBSTTA/18/8.

*Annex*

**USE OF THE AGREEMENT ON THE APPLICATION OF SANITARY AND  
PHYTOSANITARY MEASURES OF THE WORLD TRADE ORGANIZATION  
(SPS AGREEMENT)**

1. The Agreement on the Application of Sanitary and Phytosanitary Measures of the World Trade Organization (SPS Agreement)<sup>23</sup> is part of the system of multilateral trade rules of the World Trade Organization (WTO). The SPS Agreement attempts to strike a balance between, on one hand, reaffirming the rights of WTO members to adopt and enforce measures that are necessary to protect human, animal or plant life or health, and, on the other hand, making sure that these measures are not more trade-restrictive than required. The SPS Agreement applies to all sanitary and phytosanitary measures that directly or indirectly affect international trade.

*What are sanitary or phytosanitary measures?*

2. Sanitary or phytosanitary measures<sup>24</sup> can take many forms, including laws, decrees, regulations, requirements; testing, inspection, certification and approval procedures; quarantine treatments; requirements associated with the transport of animals or plants; sampling procedures; and methods of risk assessment.

3. The SPS Agreement defines sanitary and phytosanitary measures as any measure applied with one of the following objectives:

- (a) To protect animal or plant life or health from risks arising from the entry, establishment or spread of pests, diseases, disease-carrying organisms or disease-causing organisms;
- (b) To protect human or animal life or health from food- or feed-related risks;
- (c) To protect human life or health from risks arising from diseases carried by animals, plants or their products, or from entry, establishment or spread of pests;
- (d) To prevent or limit other damage from the entry, establishment or spread of pests.

4. The definition provided in Annex A of the SPS Agreement clarifies that the word “animal” is intended to include fish and wild fauna, the word “plant” includes forests and wild flora, and “pests” include weeds.

5. Most actions taken by Governments to address the risk of the introduction of alien species through trade would thus be considered to be SPS measures and covered by the SPS Agreement. Some of these actions could be considered to have the objective of protecting the health or life of native animal or plant species from negative effects of invasive alien species. Other actions would aim to prevent other damage from the entry, establishment or spread of pests, presumably including damage to infrastructure, landscapes or ecosystems.

*What rights and obligations are contained in the SPS Agreement?*

6. WTO members have the right to take sanitary and phytosanitary measures that are necessary for the protection of human, animal or plant life or health, even if these measures result in trade restrictions. However, these SPS measures have to be consistent with the provisions of the SPS Agreement. This means, for example, that the measures must be based on scientific principles, must not be discriminatory in their effect on other WTO members’ exports, and that must not be more trade-restrictive than is

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<sup>23</sup> A more detailed analysis is contained in the study “International Trade and Invasive Alien Species” by the Standards and Trade Development Facility (STDF), available at [http://www.standardsfacility.org/Files/IAS/STDF\\_IAS\\_EN.pdf](http://www.standardsfacility.org/Files/IAS/STDF_IAS_EN.pdf). A one-page briefing on the subject is also available at [http://www.standardsfacility.org/Files/Briefings/STDF\\_Briefing\\_No9\\_EN\\_web.pdf](http://www.standardsfacility.org/Files/Briefings/STDF_Briefing_No9_EN_web.pdf).

<sup>24</sup> The definition of the term “sanitary or phytosanitary measure” is contained in the SPS Agreement, Annex A, paragraph 1. The SPS Agreement is available at [http://www.wto.org/english/docs\\_e/legal\\_e/15-sps.pdf](http://www.wto.org/english/docs_e/legal_e/15-sps.pdf).

necessary to achieve the desired level of sanitary or phytosanitary protection.<sup>25</sup>

*Harmonization and international standards*

7. The SPS Agreement encourages WTO members to harmonize their SPS measures on the basis of international standards, guidelines and recommendations, since harmonization reduces costs for producers and traders and generally facilitates trade. SPS measures that conform to international standards, guidelines or recommendations are deemed to be necessary to protect plant and animal health, and are presumed to be consistent with the SPS Agreement.

8. The SPS Agreement explicitly recognizes the international standards, guidelines and recommendations developed by three organizations: for food safety, those developed by the Codex Alimentarius Commission; for animal health and zoonoses, those developed by the World Organisation for Animal Health (OIE); for plant health, those developed by the International Plant Protection Convention. For matters not covered by these three organizations, there is a possibility that the SPS Committee could identify standards developed by other relevant international organizations, but so far there has never been a proposal to recognize another standard-setting body.

*Alternatives to harmonization - measures based on a risk assessment*

9. If no relevant international standard exists, or when a WTO member wishes to deviate from an existing international standard, measures have to be based on a risk assessment. These risk assessments must take into account the risk assessment techniques developed by the relevant international organizations, which in the case of invasive alien species would refer mainly to the techniques developed by the International Plant Protection Convention and the World Organisation for Animal Health.

10. A risk assessment is defined as the evaluation of the likelihood of entry, establishment or spread of a pest or disease within the territory of an importing member according to the sanitary or phytosanitary measures which may be applied, and of the potential impacts on biological diversity and socio-economic values. Risk assessments also have to take into account available scientific evidence; relevant processes and production methods; prevalence of specific diseases or pests; existence of pest- or disease-free areas; relevant ecological and environmental conditions; and quarantine or other treatment.

11. The SPS Agreement does not require that each WTO member carry out its own risk assessment. Where a regional, academic or other body - or for instance a neighbouring country - has carried out a risk assessment that is appropriate to the circumstances of the importing member, nothing would stop that member from relying on such a risk assessment as a basis for a measure. Of course, the importing member has to make sure that the risk assessment fulfils the requirements for instance to take into account the techniques developed by International Plant Protection Convention and World Organisation for Animal Health.

12. In situations where relevant scientific evidence is insufficient to carry out a risk assessment, the SPS Agreement allows members to adopt provisional SPS measures on the basis of the available pertinent information, including that from relevant international organizations and from measures applied by other members. When they adopt such provisional measures, members have to try to obtain additional information to allow them to carry out a risk assessment, and to review the provisional measure within a reasonable period of time.

*How to inform WTO members on import requirement measures*

13. All WTO member governments must maintain an Enquiry Point,<sup>26</sup> an office responsible for

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<sup>25</sup> This section summarizes the provisions of the SPS Agreement contained mainly in Articles 2, 3 and 5. Of course, the SPS Agreement contains many other obligations, including with respect to recognition of equivalent measures, adaptation of measures to regional conditions, transparency etc. More information is available at [www.wto.org/spis](http://www.wto.org/spis).

<sup>26</sup> Contact details for Enquiry Points can be consulted electronically through the SPS Information Management System (SPS IMS), <http://spsims.wto.org>.

informing other WTO members of any quarantine measures established by the member. This office is designated to receive and respond to any requests for information regarding that country's sanitary and phytosanitary measures. Such requests may be for copies of new or existing regulations, information on relevant agreements between two countries, or information about risk assessment decisions.

*Addressing risks to animals posed by animal diseases and invasive animals*

14. The World Organisation for Animal Health was founded in 1924 as the Office International des épizooties (OIE) to provide international cooperation and coordination against the spread of animal diseases. Ninety years later, the core mandate of the organization has been expanded to become “the improvement of animal health, veterinary public health and animal welfare world-wide”.

15. Under this overall mandate the World Organisation for Animal Health has set some strategic objectives and among others, the following two objectives are particularly relevant to the control of invasive alien species:

(a) Develop scientifically based standards and guidelines for the international community on all matters concerning animal health, veterinary public health, and animal welfare;

(b) Communicate timely and accurate animal disease information, including information on zoonoses, by making the best use of scientific data modelling, modern information technologies, and tracking systems for non-official information.

16. The OIE standards, recognized by the SPS Agreement as the international standards for animal health including zoonoses, are published as the OIE Animal Health Codes (Terrestrial Animal Health Code and Aquatic Animal Health Code) and the OIE Manuals (Manual of Diagnostic Tests and Vaccines for Terrestrial Animals and Manual of Diagnostic Tests for Aquatic Animals). These international standards cover a wide range of animal health and veterinary public health matters. These standards include issuing notifications, undertaking import risk analyses, surveillance, disease prevention and control measures, establishing trade requirements for animals and animal products, and requiring the use of diagnostic tests and vaccines.

17. The World Organisation for Animal Health urges its Member Countries to apply these standards to prevent the spread of animal pathogens and facilitate safe trade of animals and animal products thereof. Animal pathogens considered to be invasive alien species are covered by the OIE standards. In particular, the World Organisation for Animal Health listed diseases such as foot and mouth disease and avian influenza under its disease-specific standards.

18. In addition, animal health measures provided for in the OIE standards can be applied to invasive alien animals that are carriers of animal pathogens and, where relevant, pathogens for wild animals.

19. Early detection and early response is key for tackling highly contagious animal diseases; the same applies for invasive alien species control. The World Organisation for Animal Health's animal disease information system (World Animal Health Information System: WAHIS) plays a central role in this regard. In addition, the World Organisation for Animal Health launched in January 2014 its new disease information system (WAHIS-Wild) dedicated to wild animals, in light of the growing importance of the role of wildlife in animal disease prevention and control at the human/animal/environment interface.

20. While there is an OIE standard on import risk analysis for animal pathogens, the OIE does not specifically address invasive alien species (IAS) animals that are not animal pathogens or potential carriers of animal pathogens. However, the principles of risk analysis are equally applicable for border control measures for both pathogens and IAS animals that are pathogens. The OIE developed Guidelines for assessing the risk of non-native animals becoming invasive<sup>27</sup> as guidelines complementary to the OIE standards on import risk analysis, which can be applied to alien animals that are not pathogens nor carrier of pathogens.

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<sup>27</sup> [www.oie.int/fileadmin/Home/eng/Our\\_scientific\\_expertise/docs/pdf/OIEGuidelines\\_NonNativeAnimals\\_2012.pdf](http://www.oie.int/fileadmin/Home/eng/Our_scientific_expertise/docs/pdf/OIEGuidelines_NonNativeAnimals_2012.pdf).

21. Standards for risk analysis are of crucial importance for ensuring the conformity of measures on the introduction of alien species as pets, aquarium and terrarium species, and as live bait and live food that may result in trade restrictions with the SPS Agreement. As described above, measures that conform to international standards, guidelines or recommendations are deemed to be necessary to protect human, animal or plant life or health, and are presumed to be consistent with the SPS Agreement. Such standards frequently include standards on risk analysis. If no relevant international standard exists, or when a WTO member wishes to deviate from an existing international standard, measures have also to be based on a risk assessment. These risk assessments must take into account the risk assessment techniques developed by the relevant international organizations.

*Addressing risks to plants posed by plant pests and invasive plants*

22. The International Plant Protection Convention (IPPC) promotes action to protect plants and plant products from the spread of pests, and sets out measures to control plant pests. To protect the world's cultivated and natural plant resources from the spread and introduction of plant pests while minimizing interference with the international movement of goods and people, the International Plant Protection Convention provides an international framework for plant protection that includes International Standards for Phytosanitary Measures (ISPMs).

23. The adopted standards under the International Plant Protection Convention (<https://www.ippc.int/core-activities/standards-setting/ispm#block-agenda-items-list>) provide guidance to contracting parties of the International Plant Protection Convention on phytosanitary principles for the protection of plants, and the application of phytosanitary measures in international trade, with specific standards covering not only pest risk analysis but also import and export systems, post-border controls, and surveillance and reporting on pests and diseases (see also section III B of UNEP/CBD/COP/11/INF/33).

24. While the International Plant Protection Convention's primary focus is on plants and plant products moving in international trade, the International Plant Protection Convention also covers research materials, biological control organisms, germplasm banks, containment facilities and anything else that can act as vectors for the spread of plant pests (e.g., containers, packaging materials, soil, vehicles, vessels and machinery).

25. The ISPM 11, Pest Risk Analysis for Quarantine Pests, is an international standard to assess the risk of pests or alien plants becoming invasive, on which basis countries may decide whether to allow or prohibit the import of a pest, or which measures need to be undertaken in order to minimize the analysed risk. The ISPMs also provide measures for risk management. Appropriate measures should be chosen based on their effectiveness in reducing the probability of introduction of the pest with respect to the phytosanitary principles of ISPM 1 and through appropriate risk communication. In accordance with these principles, phytosanitary measures need to be cost-effective and feasible; they must not be more trade-restrictive than necessary; and measures should be applied to the minimum area necessary for the effective protection of the endangered area and others.

26. According to ISPM 11, phytosanitary measures taken in relation to environmental hazards, such as invasive alien species, should, as appropriate, be notified to relevant competent authorities responsible for national biodiversity policies, strategies and action plans. It has been noted in this ISPM that the communication of risks associated with environmental hazards is of particular importance to promote awareness. The International Plant Protection Convention and the principle of "transparency" (ISPM 1) require that countries should, on request, make available the rationale for phytosanitary requirements.

27. The process for implementing the International Plant Protection Convention at the national level includes, in most cases, the following elements: pest risk analysis, pest listing, recognition of pest free areas and areas of low pest prevalence, official control for regulated pests, systems approach, surveillance, pest reporting, phytosanitary certification, phytosanitary integrity and security of consignments, prompt action, emergency measures, provision of a national plant protection organization

(NPPO), dispute settlement, avoidance of undue delays, notification of non-compliance, information exchange and technical assistance. The NPPO is the responsible authority to ensure that phytosanitary measures are in place.

28. ISPM 20, Guidelines for a Phytosanitary Import Regulatory System, provides guidance on a regulatory framework of phytosanitary legislation, phytosanitary regulations and phytosanitary procedures, which serves as a framework to undertake the measures referred to in previous paragraphs. It includes principles for drafting phytosanitary import requirements in accordance with the SPS Agreement.

29. In accordance with ISPM 20, an importing country can prevent the entry of an invasive alien species by designating the organism as quarantine pest or regulated non-quarantine pest (in case the organism is a plant for planting). Quarantine pests and regulated non-quarantine pests are referred to as regulated pests. Lists of regulated pests are established by an importing contracting party to specify all currently regulated pests for which phytosanitary measures may be taken. Specific lists are provided on request to the NPPOs of exporting contracting parties as the means to specify the regulated pests for the certification of particular commodities. In accordance with ISPM 19, quarantine pests, including those subject to provisional or emergency measures, and regulated non-quarantine pests should be listed. Required information associated with the listing includes the pest's (or invasive alien species') scientific name, the pest category, and commodities or other articles that are regulated for the pest. Supplementary information may be provided, such as synonyms and references to data sheets and pertinent legislation. Updating of the lists is required when pests are added or deleted or when required information or supplementary information changes. Lists should be made available, and may be posted on the International Phytosanitary Portal (IPP), <http://www.ippc.int>, or supplied to other contracting parties on request.

30. In case the prevention of the entry of an alien species at the border area failed and the regulated article entered into a new area, ISPM 9<sup>28</sup> provides detailed guidance on the development of pest eradication programmes to prevent establishment or spread, which usually involves surveillance (see ISPM 6<sup>29</sup>), containment and treatment, and/or control measures. Surveillance may include a pathway analysis to identify the source of the pest and its possible spread, the inspection of clonally or contact-linked material, inspection, trapping, and aerial observation. This may also include targeted inquiries to growers, those responsible for storage and handling facilities, and the public. Arrangements should be made by the national plant protection organization for the release of regulated articles from the quarantine area, by clearance after verification of compliance with phytosanitary measures such as inspection, treatment or destruction.

31. Where eradication fails, national authorities generally try to contain the outbreak of alien organisms. ISPM 4<sup>30</sup> and ISPM 29<sup>31</sup> provide guidance on how to establish and obtain formal recognition for pest free areas or Areas of Low Pest Prevalence. It is important to note that the framework of the International Plant Protection Convention allows management of regulated pests to slow the spread of an organism or keep it at low pest prevalence by providing risk management options for exporting countries of plants and plant products.

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<sup>28</sup> [https://www.ippc.int/sites/default/files/documents/20131009/ispm\\_09\\_1998\\_en\\_2013-08-26\\_2013100911%3A02--167.72%20KB.pdf](https://www.ippc.int/sites/default/files/documents/20131009/ispm_09_1998_en_2013-08-26_2013100911%3A02--167.72%20KB.pdf).

<sup>29</sup> [https://www.ippc.int/sites/default/files/documents//1323944793\\_ISPM\\_06\\_1997\\_En\\_2011-12-01\\_Refor.pdf](https://www.ippc.int/sites/default/files/documents//1323944793_ISPM_06_1997_En_2011-12-01_Refor.pdf).

<sup>30</sup> [https://www.ippc.int/sites/default/files/documents//1367570788\\_ISPM\\_04\\_1995\\_En\\_2011-12-01\\_Refor.pdf](https://www.ippc.int/sites/default/files/documents//1367570788_ISPM_04_1995_En_2011-12-01_Refor.pdf).

<sup>31</sup> [https://www.ippc.int/sites/default/files/documents/20131024/ispm\\_27\\_2006\\_en\\_2012-08-28\\_2013102413%3A54--180.04%20KB.pdf](https://www.ippc.int/sites/default/files/documents/20131024/ispm_27_2006_en_2012-08-28_2013102413%3A54--180.04%20KB.pdf).